

AMENDMENTS TO THE CLAIMS

Claims 1-19: (Canceled)

20. (Currently Amended) An apparatus for the detection of a non-nucleic acid target analyte in a test sample, comprising:

a) a test chamber comprising an array of first measuring electrodes each comprising:

i) a ~~self-assembled monolayer~~ passivation agent monolayer; and

ii) a binding ligand covalently attached to said electrode via a spacer;

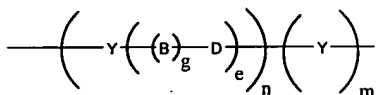
wherein said test chamber further comprises at least one second measuring electrode; and

b) a voltage source electrically connected to said test chamber.

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Claim 21: (Canceled)

22. (Currently Amended) An apparatus according to claim ~~21~~ 20 wherein said spacer is a conductive oligomer ~~has~~ having the formula:



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

g is either 1 or zero;

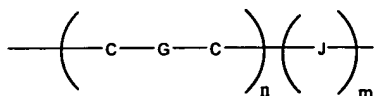
e is an integer from zero to 10; and

m is zero or 1;

wherein when g is 1, B-D is a conjugated bond; and

wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen, silicon or phosphorus.

23. (Currently Amended) An apparatus according to claim ~~21~~ 20 wherein said spacer is a conductive oligomer ~~has~~ having the formula:



wherein

n is an integer from 1 to 50;

m is 0 or 1;

C is carbon;

J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of oxygen, nitrogen, silicon, phosphorus, sulfur; and

G is a bond selected from alkane, alkene or acetylene, wherein if $m = 0$, at least one G is not alkane.

Claims 24-29: (Canceled)

30. (New) An apparatus for the detection of a non-nucleic acid target analyte in a test sample comprising:

a) a test chamber comprising an array of electrodes each comprising:

i) a ~~self-assembled monolayer~~ passivation agent monolayer; and

ii) a binding ligand covalently attached to said electrode via a spacer ~~an insulator~~;

wherein said test chamber further comprises at least one second measuring electrode; and

b) a voltage source electrically connected to said test chamber; and

c) an electronic detector.

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31. (New) An apparatus according to claim 20 or 30 wherein said ~~self-assembled monolayer~~ passivation agent monolayer comprises insulators.

32. (New) An apparatus according to claim 20 or 30 wherein said ~~self-assembled monolayer~~ passivation agent monolayer comprises conductive oligomers.

33. (New) An apparatus according to claim 20 or 30 wherein said ~~self-assembled monolayer~~ passivation agent monolayer comprises insulators and conductive oligomers.

34. (New) An apparatus according to claim 20 or 30 wherein said binding ligand is a protein.

35. (New) An apparatus according to claim 20 or 30 further comprising a processor coupled to said electrodes and configured to receive an output signal.

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